

PROJECT DESCRIPTION

THIS PROJECT INVOLVES RECONSTRUCTION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 528 & 81ST STREET INCLUDING APS PUSHBUTTONS, LED COUNTDOWN PEDESTRAIN SIGNAL HEADS, LED TRAFFIC SIGNAL HEADS AND VIDEO DETECTION. MD 528 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE MD 528 LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING.

CONTROLLER REQUIREMENTS

A FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH TELEMETRY CABLE HOUSED IN A BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE FURNISHED BY SHA. AN APS CENTRAL CONTROL UNIT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS COASTAL HIGHWAY:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS COASTAL HIGHWAY AT 81ST."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1003	MAINTENANCE OF TRAFFIC	EA	3
2002	TEST PIT EXCAVATION	CY	5
5005	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS ANY WIDTH	LF	1140
5006	F & I 12" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	1020
5007	F & I 24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	120
6001	F & I STANDARD TYPE A COMBINATION CURB AND GUTTER 12" GUTTER PAN 8" DEPTH	LF	229
6002	F & I 5" CONCRETE SIDEWALK	SF	954
6003	F & I DETECTABLE WARNING SURFACE FOR CURB RAMPS	SF	165
8001	F & I 2 WIRE CENTRAL CONTROL UNIT	EA	1
8007	F & I AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS	EA	4
8008	F & I BREAKAWAY PEDESTAL POLE (ANY SIZE)	EA	2
8021	REMOVE & DISPOSE MATERIAL AND EQUIPMENT PER ASSIGNMENT	EA	1
8024	F & I TWIN MAST ARM POLE & 50'/70' MAST ARMS ANY 'T' DIMENSION	EA	2
8025	F & I VIDEO DETECTION CAMERA AND CABLE UP TO 500'	EA	5
8032	F & I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4" - BORED	LF	225
8034	F & I SCHEDULE 80 RIGID PVC CONDUIT UP TO 4" - TRENCHED	LF	85
8036	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	36
8038	F & I NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	350
8040	F & I WEATHER HEAD, 3"	EA	2
8042	F & I ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS	EA	1
8043	F & I ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 AWG - THHN/THWN	LF	90
8045	F & I ELECTRICAL HANDHOLE	EA	4
8049	F & I 3" DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	LF	30
8050	F & I 12" LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	6
8054	F & I ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	600
8056	F & I ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	710
8057	F & I ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1560
8065	INSTALL CONTROLLER AND CABINET - BASE MOUNT	EA	1
8066-A	12-PAIR COMMUNICATION CABLE, SELF-SUPPORTING (OVERHEAD)	LF	3280
8067-A	RELOCATE EXISTING TRAFFIC SIGNAL (ENTIRE CLUSTER)	EA	10
8068-A	RELOCATE EXISTING PED SIGNAL	EA	4
8071-A	RELOCATE EXISTING SIGNS	EA	2
NEG	6"X6" LANDSCAPE TIMBER	LF	74

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME PROPERTY OF THE CONTRACTOR. CONTRACTOR SHALL RETURN ALL VIDEO DETECTION CAMERAS REMOVED FROM THE INTERSECTION TO SHA SIGNAL SHOP.

CONTACT PERSONS FOR DISTRICT #1 ARE AS FOLLOWS:

MR. GENE COFIELL ASSISTANT DISTRICT ENGINEER-TRAFFIC PHONE: (410) 677-4040	MR. GREG HOLSEY ASSISTANT DISTRICT ENGINEER - CONST. PHONE: (410) 677-4020
MR. BRUCE POOLE DISTRICT UTILITY ENGINEER PHONE: (410) 677-4082	MR. JAMES WRIGHT ASSISTANT DISTRICT ENGINEER - MAINT. PHONE: (410) 677-4010
MR. TERRY MCGEAN TOWN OF OCEAN CITY - CITY ENGINEER PHONE: (410) 289-8845	

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MR. RICHARD L. DAFF, SR. CHIEF, TRAFFIC OPERATIONS DIVISION PHONE: (410)787-7630	MR. ROBERT SNYDER ASSISTANT DIVISION CHIEF TRAFFIC OPERATIONS PHONE: (410)787-7630	MR. JOHN GOVER OFFICE OF HIGHWAY DESIGN PHONE: (410) 545-8766
MR. ED RODENHIZER CHIEF, SIGNAL OPERATIONS PHONE: (410)787-7650	MR. EUGENE BAILEY CHIEF, SIGNAL OPERATIONS PHONE: (410)787-7676	

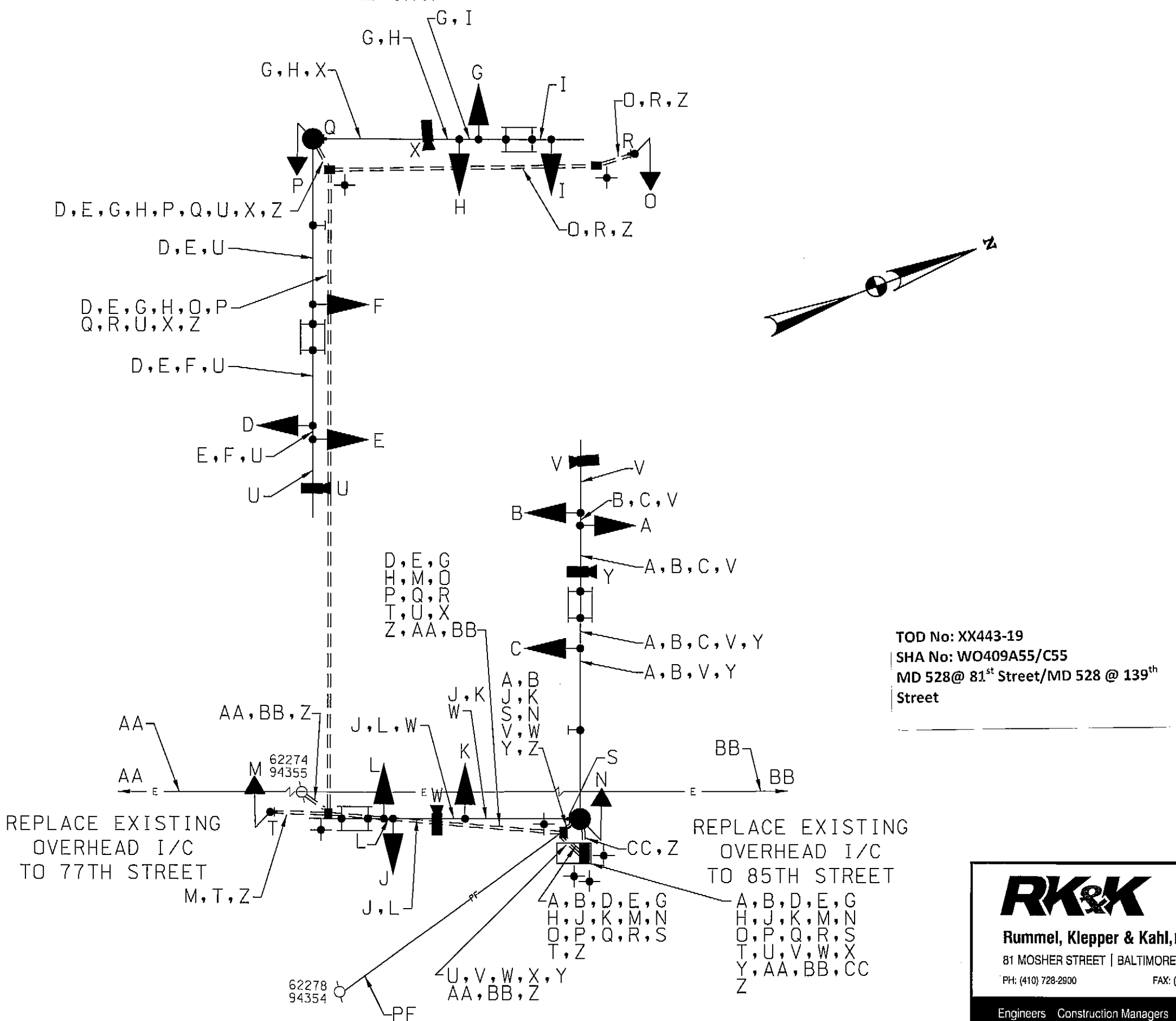
EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
9042	CONTROLLER ASC II WITH TELEMETRY	EA	1
9044	CONTROLLER CABINET, SIZE 6	EA	1
9087	VIDEO DETECTION INTERFACE EQUIPMENT: 5-8 CAMERAS	EA	1
9571	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN	SF	36
	4 - D-3(1) (72"X16")		
	4 - R10-3(1) (9"X15")		

WIRING KEY

Q,R,S,T	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	AA,BB	12-PAIR COMMUNICATION CABLE (NO. 19 AWG) SELF-SUPPORTING OVERHEAD
C,F,I,L M,N,O,P	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	PF	RELOCATED OVERHEAD POWER SERVICE BY DELMARVA
A,B,D,E, G,H,J,K	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
CC	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG) 3 RUNS	+	PROPOSED GROUND ROD
U,V,W,X Y	VIDEO DETECTION CAMERA CABLE		



PHASING CHART

NO PHASE CHANGE

GENERAL NOTES

- ALL EXISTING FOUNDATION TOPS WITHIN EXISTING SIDEWALK SHALL BE REMOVED 2" BELOW SIDEWALK GRADE AND NEW SIDEWALK SHALL BE INSTALLED TO BE FLUSH WITH FINAL GRADE.
- ALL PROPOSED FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
- ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- ANY HARDWARE NECESSARY FOR THE INSTALLATION OF RELOCATED TRAFFIC SIGNAL EQUIPMENT SHALL BE INCIDENTAL TO THE PERTINANT RELOCATE PAY ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
- THE CONTRACTOR SHALL COORDINATE WITH DISTRICT 1 TRAFFIC TO COORDINATE TRAFFIC SIGNAL TURN OFF AND TEMPORARY STOP CONTROL. CONTRACTOR SHALL VERIFY ANY EVENT OR DATE RESTRICTIONS PRIOR TO TRAFFIC SIGNAL TURN OFF.
- UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- THE CONTRACTOR SHALL VERIFY ALL POLE LOCATIONS PRIOR TO INSTALLATION.
- VIDEO DETECTION CAMERA LOCATION/ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL CAP AND ABANDON CONDUIT FEEDING SIGNAL EQUIPMENT THAT IS REMOVED.
- ADA REQUIRES THAT ANY ABRUPT CHANGE IN ELEVATION IN SIDEWALK BE LESS THAN 1/4".
- VIDEO DETECTION CAMERAS FOR EAST AND WEST APPROACHES SHALL BE CHECKED IN THE FIELD BY THE ENGINEER PRIOR TO PERMANENT INSTALLATION TO ELIMINATE ANY POSSIBLE TELECOMMUNICATION CABLE CONFLICTS.
- THE CONTRACTOR SHALL TRIM THE EXISTING TREE IN THE SW CORNER OF THE INTERSECTION IF THE BRANCHES THAT EXTEND INTO PUBLIC RIGHT OF WAY OBSTRUCT THE PEDESTRIAN SIGNAL HEAD, VEHICULAR SIGNAL HEADS OR SIGNS.
- OCEAN CITY DPW SHOULD BE CONTACTED A MINIMUM OF TWO WEEKS PRIOR TO STARTING WORK ON THIS INTERSECTION TO COORDINATE FIRE HYDRANT RELOCATION. REFER TO SIGNAL PLAN SHEET FOR CONTACT AND PHONE NUMBER.
- ALL HARDWARE NECESSARY FOR THE INSTALLATION OF RELOCATED TRAFFIC SIGNAL EQUIPMENT SHALL BE INCIDENTAL TO THE PERTINANT RELOCATE PAY ITEM.

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF TRAFFIC & SAFETY TRAFFIC ENGINEERING DESIGN DIVISION MD 528 (COASTAL HWY.) AT 81ST ST. OCEAN CITY, MARYLAND	
REVISIONS	GENERAL INFORMATION SHEET
SCALE NONE DATE NOVEMBER 2009 CONTRACT NO. XX4435185	
DESIGNED BY BJC COUNTY WORCESTER	
DRAWN BY BJC LOGMILE 23052803.61	
CHECKED BY BLB TIMS NO. K186	
FAP NO. TOD NO.	
TS NO. 2122C-GI DRAWING SG-2 OF 4 SHEET NO. 2 OF 7	